# EIGHTY-FOURTH REPORT
# PUBLIC ACCOUNTS COMMITTEE
# (1994-95)

## (TENTH LOK SABHA)

## DESIGN AND DEVELOPMENT OF ADVANCED LIGHT HELICOPTER

## MINISTRY OF DEFENCE

*[Action Taken on 58th Report of Public Accounts Committee (10th Lok Sabha)]*

*Presented to Lok Sabha on 21 March, 1995*
*Laid in Rajya Sabha on 21 March, 1995*

LOK SABHA SECRETARIAT
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## PUBLIC ACCOUNTS COMMITTEE
## (1994-95)

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## CHAPTER I

## REPORT

This Report of the Committee deals with the action taken by Government on the recommendations/observations of the Committee contained in their Fifty-Eighth Report (Tenth Lok Sabha) on Paragraph 5 of the Report of the Comptroller and Auditor General of India for the year ended 31 March, 1991, No. 9 of 1992, Union Government—Defence Services (Air Force & Navy) relating to design and development of Advanced Light Helicopter.

2. The Fifty-Eighth Report which was presented to Lok Sabha on 9 March, 1994 contained 12 recommendations/observations action taken notes on all these recommendations/observations have been received from the Ministry of Defence. The action taken notes have been broadly categorised as follows:—

(i) Recommendations and observations which have been accepted by Government:

Sl. Nos.: 1, 2, 3, 5, 6, 7, 8, 10 and 12;

(ii) Recommendations and observations which the Committee do not desire to pursue in the light of the replies received from the Government:

Sl Nos.: 4 & 11;

(iii) Recommendations and observations replies to which have not been accepted by the Committee and which require reiteration:

Nil

(iv) Recommendations and observations in respect of which Government have furnished interim replies:

Sl. No.: 9

**3. The Committee hope that the final reply in respect of the recommendation for which only interim reply has been furnished will be submitted by the Ministry expeditiously after getting it duly vetted by Audit.**

4. In the succeeding paragraphs the Committee deal with the action taken by Government on some of their recommendations.

*Delay in design and development of Advanced Light Helicopter*

5. In their 58th Report, the Committee had found that the development and manufacture of an advanced technology multi-role light helipcopter which was mooted as early as in 1970 to succeed Cheetah and Chetak helicopters and whose induction was to commence from 1981-82 was still to take off even after a lapse of over 23 years. The cost of design and development of Advanced Light Helicopter (ALH) which was envisaged as Rs. 27.36 crores in 1976 and revised to Rs. 67.87 crores in 1984 went up to Rs. 251.90 crores in 1990. The present estimate of design and development cost of ALH based on April 1992 level is Rs. 390.68 crores. Similarly, the cost of the Helicopter (ALH) which was originally estimated at Rs. 35 lakh in 1971 and revised to Rs. 70 lakhs in 1979 would now cost Rs. 9 crores. As per the schedule, all the 13 milestones including prototype delivery of the helipcopter to Indian Air Force (IAF) should have been completed by 1991. Subsequently, the target dates for accomplishment of the different milestones were revised and in terms of the modified schedule as informed to the Committee during evidence, all the 13 milestones were to be completed by December 1994. The Committee in their earlier Report had, however, observed that only 8 out of the 13 milestones had been achieved so far. Expressing their deep distress over the inordinate delay in the development and production of ALH resulting in huge cost and time overruns, the Committee had recommended that with a view to obviating chances of any further cost and time overruns, concerted efforts should be made by all concerned to ensure that the remaining part of the developmental activities on this project is completed expeditiously and that the production of the helicopter commences as per the time schedule now worked out.

6. The Committee in their earlier Report had also noted that from the very inception of the project, the development of the ALH was aimed at developing a multi-role helicopter with different standard of equipment fit for attack, utility, Air Observation Post (AOP) and other roles including training. However, in pursuance of the assertion and insistence of particularly the Army, who had their own reservations about the multi-utility of the ALH, certain vital structural changes were effected in the design during the course of development which had an important bearing on its multi-purpose utility. These conceptual changes, in turn, brought out substantial variations in the size, weight and manoeuvreability of the multi-role helicopter. Consequently, the AOP role of the ALH had to be dispensed with due to its increased weight and IAF did not find it suitable for training purposes. Even for attack role, it was not considered suitable by the services. This change in project perception clearly defeated the original purpose of developing a multi-role ALH. It also necessitated formulation of a fresh Air Staff Requirement(ASR) to develop attack version of the ALH, work for which was yet to commence. The overall delay in the availability of ALH particularly with attack role capability,

apart from denying a vital weapon system to IAF, led to the continued deployment of available helicopters for roles for which they were not fully equipped. There had also been inordinate delay in concluding the second collaboration agreement for development of ALH and the expenditure of sizeable magnitude incurred under the first agreement being rendered largely infructuous. While taking a serious view of the manner in which the project has been developed so far, the Committee had in their earlier Report recommended that the reasons for the inordinate delay in the execution of this project should be thoroughly analysed at the highest level and remedial steps should be taken to ensure that the deficiencies experienced in the execution of this project are obviated in the future defence project.

7. While intimating the latest position of the ALH project the Ministry of Defence (Depertment of Defence Production & Supplies) in their action taken note furnished on 1st February, 1995 have stated:—

> "With the first flight of third prototype (PT-3) having taken place in May 1994, 10 out of 13 milestones have been accomplished as on date. The remaining three milestones are expected to be achieved in the course of this year. As was submitted to the PAC in the oral examination on 16 February, 1993, production is scheduled for 1996-97 subject to availability of funds."

8. The Ministry in their action taken note also *interalia* stated:—

"The delays in execution of the project were caused initially by lack of resources, and subsequently, due to changes in the requirements of the services. It is felt that a project of this nature has to be sensitive to the requirement of the customers and, therefore, certain flexibility in time-frame becomes necessary. Similarly, certain amount of delay is inherent in designing and developing a helicopter of such advanced features with help from outside agencies. Adequate time and attention need to be devoted to analysing the flight test data and investigating and solving development problems which are inherent in any design/ development programme. The time-frame of development of ALH, which is the first such project taken up by HAL, compares favourably with the time-frame for similar development programmes undertaken by established helicopter manufacturers abroad. The flight test achievements of ALH also indicate that ALH has, within a short span of time, demonstrated compliance with major performance parameters stipulated in the Air Staff Requirement (ASR).

Although the attack and AOP roles had to be dispensed with to accommodate the specific requirements of the Army, the ALH continues to be a multi-role helicopter capable of performing the roles of armed reconnaissance and surveillance, close air support, antisubmarine warfare, casualty evacuation, aerial mine laying, aerial electronic warfare platform, logistic support, search & rescue, carrying

underslung load, etc. Thus the ALH will be useful for the three services.

Further specialised variants can be derived from the basic version relatively easily. HAL has already submitted a proposal for a Light Attack Helicopter (LAH) to the Ministry of Defence. Considering the above facts, it is submitted that the ALH programme has been a major step forward in the direction of self-reliance in designing and developing a helicopter of such sophistication.

Notwithstanding the above, every attempt would be made by the Ministry of Defence to ensure that such delays are minimised in future. Necessary instructions issued in this regard are enclosed."

9. The Ministry of Defence (Deprtment of Defence Production & Supplies) *vide* the instructions referred to above issued on 9 December, 1994 while emphasising the need to avoid delays in the execution of defence projects, directed the concerned authorities that immediate steps may be taken to review the existing mechanism for monitoring the prioritisation of programmes under implementation, and ensure that delays do not take place on account of factors which are within the control of the Ministry.

**10. In their earlier Report the Committee had found that the development and manufacture of an advanced technology multi-role light helicopter (subsequently named as Advanced Light Helicopter—ALH) which was mooted as early as in 1970 to succeed Cheetah and Chetak helicopters and whose induction was to commence from 1981-82 was still to take off even after the lapse of over 23 years. The cost of design and development of ALH which was envisaged as Rs. 27.36 crores in 1976 was as per the latest estimates intimated to the Committee expected to cost about Rs. 390 crores. Similarly, the cost of the helicopter (ALH) which was originally estimated at Rs. 35 lakhs in 1971 would now cost Rs. 9 crores. As per the revised schedule intimated to the Committee during evidence, all the 13 milestones were expected to be completed by December 1994 and the exercise of commencing series production of ALH was likely to take place from 1996-97. However, the Committee find from the the action taken note that only 10 out of the 13 milestones have been accomplished as on date. Evidently, the development project has further lagged behind the schedule which is a matter of concern to the Committee. The Ministry of Defence have now assured the Committee that the remaining three milestones are expected to be achieved in the course of this year and that the production is scheduled to commence from 1996-97 itself subject to availability of funds. The Committee would once again emphasise that all concerted efforts should be made to ensure that the remaining parts of the developmental activities on this project are completed expeditiously and that the production of the helicopter commences without any further modification in the schedule. The Committee would like to be informed of the latest position of the project**

**and the project cost now estimated for completion of the project and also the helicopter.**

**11. The Committee further note that in the light of the deficiencies experienced in the execution of ALH project, the Ministry of Defence have in pursuance of the recommendations of the Committee, issued instructions to all concerned to take immediate steps for reviewing the existing mechanism for monitoring and prioritisation of programmes under implementation and ensure that delays do not take place on account of factors which are within the control of the Ministry. The Committee trust that the Ministry of Defence will faithfully implement these instructions with a view to minimising delays in the execution of similar defence projects.**

## CHAPTER II

## RECOMMENDATIONS AND OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY GOVERNMENT

### Recommendation

The Aeronautics Committee constituted by the Government of India in 1967 had envisaged an increasingly important role for helicopters and in keeping with the national policy of acquiring indigenous capabilities and self-reliance had recommended in 1969 that steps should be initiated to develop a design organisation in the country in this field. Based on this recommendation and the decision taken by the Defence Committee of the Cabinet in this regard at their meeting held in February 1970, the Government of India entered into a 10 year collaboration agreement in September 1970 with a foreign firm, SNIAS of France (firm A) for the design, development and production of an Armed Light Helicopter (A.L.H.) to meet the requirements of the 1980s as a successor to Cheetah and Chetak helicopters. This project was assigned to Hindustan Aeronautics Ltd. (HAL) for implementation on behalf of the Government of India. The project was finally approved by Government in January 1976. The design work on the Armed Light Helicopter with single engine configuration was initiated soon after the approval of the project in February 1976. The first mock-up Conference was held at Bangalore in April 1977. Subsequently, in August 1977, based on the experience gained from the Vietnam was and Arab-Israeli conflict, Air Headquarters submitted a proposal to the Armed Light Helicopter Steering Committee for changing the helicopter to twin engine configuration.

[Sl. No. 1 (Para 65) of Appendix II to fifty-eight Report of PAC (10th Lok Sabha)]

### Action Taken

The above is a factual statement. No action is required to be taken. This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. NO. 48(42)/8/92 dated 27.1.1995]

### Recommendation

The development of the Armed Light Helicopter had engaged the attention of the Public Accounts Committee on an earlier occasion also. In their 76th Report (1981-82) (Seventh Lok Sabha) presented in the Lok Sabha on 26th March 1982, the Committee had observed that due to the delay of 5½ years in sanctioning the project, the cost of setting up of the design facilities and for development had escalated from Rs. 31.84 crores

in 1972 to Rs. 41.05 crores in 1976. The development cost had gone up from Rs 23.04 crores in 1972 to Rs. 37.50 crores in 1979. Referring to the further delay caused by the decision to change over from single engine to twin engine configuration, the Committee had observed that it was unfortunate that a technological gap was allowed to develop and the Ministry of Defence failed to incorporate the advanced technology already available since 1960s. Deprecating this lacuna in defence planning with reference to vital projects of this nature, the Committee had suggested that active steps should be taken to overcome this deficiency. In their 130th Report (1982-83, Seventh Lok Sabha) presented in the Lok Sabha on 25th March, 1983, while reviewing the action taken on 76th Report, the Committee had expressed their concern over the delay in finalising the proposals for design collaboration agreement and had emphasised the need for expeditious manufacture of the helicopter. The Committee's examination of the present Audit Paragraph has revealed several disquieting aspects arising out of the progress of the project, performance of collaboration agreements, the impact of delays and the current status which are dealt with in this succeeding paragraphs.

[Sl. No. 2, (Para 66) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

The above is a factual statement. Action taken notes/responses are given in the succeeding paragraphs.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. NO. 48(42)/8/92 dated 27.1.1995]

**Recommendation**

The Committee are concerned to note that despite the fact that the relative merits of twin engine helicopters were known in early 1977, sanction to switch over from single to twin engine helicopter was issued only in January 1979 i.e. after a delay of 20 months. The Ministry of Defence failed to convince the Committee of the reasons for this inordinate delay. What has further caused concern to the Committee is that the agreement with firm "A" was not foreclosed even after change in the configuration by invoking provisions to this effect in the agreement. It was simply allowed to expire in September 1980 resulting in an avoidable payment of over Rs. 10 lakhs to the firm. While explaining the position, the Ministry of Defence stated that the collaboration agreement with firm "A" was not foreclosed as the issue of change-over from single to twin engine version continued to be negotiated with that firm. In the opinion of

the Committee, the argument is somewhat specious as the matter could have been discussed with firm "A" even after foreclosing the existing agreement. The Committee deprecate this omission on the part of the authorities concerened.

[Sl. No. 3, (Para 67) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

Based on the experience gained from the Vietnam war and Arab-Israeli conflict, it was decided in August 1977 to switch over to twin engine configuration. Accordingly, in October 1978, Air Hqrs. put up a proposal for change over to twin engine configuration after a careful study of the cost, state of technology, the time implication. The proposal was approved by CCPA in December 1978 and the sanction was issued by the Government in January 1979.

The activities on the single engine Ar.L.H. were discontinued by end of 1977. A joint study for ascertaining the feasibility of accommodating tw' engines on the Ar.L.H. was carried out by HAL and M/s. SNI.' However, this was not found feasible. The ASR 2/79 for twin engine ALH was issued in May 1979. Proposals received from three firms, including SNIAS, were thoroughly scruitinised by the Working Group and discussed by the Government before the configuration and the area of collaboration were finally decided upon. As the issue of change over from single-engine to twin-engine version continued to be negotiated, the collaboration agreement with the firm "A" (SNIAS) was not foreclosed.

However, it is accepted that where the advantage is in favour of foreclosure, such a collaboration agreement should be considered for foreclosure in future projects. Necessary instructions have been issued in this regard. A copy is enclosed (Appendix I).

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48 (42)/8/92 dated 27.1.95]

**Recommendation**

The Committee note that from the very inception of the project, the development of the Advanced Light Helicopter was aimed at developing a multi role helicopter with different standard of equipment fit for attack, utility, Air Observation Post (AOP) and other roles including training. However, in pursuance of the assertion and insistence of particularly the Army, who had their own reservations about the multi-utility of the ALH, certain vital structural changes were effected in the design during the course of development which had an important bearing on its multipurpose utility. These conceptual changes, in turn, brought out substantial variations in the size, weight and maneuverability of the multi role helicopter. Different services had reacted to these deviations as per their own perceptions. The ASR, however, was not amended. Consequently,

the AOP role of the ALH had to be dispensed with due to its increased weight and IAF did not find it suitable for training purposes. Even for attack role, it was not considered suitable by the services. While conceding these shortcoming, the Ministry of Defence maintained that ALH would still be used for a number of roles like casualty evacuation, communication, logistic support and assault, offshore operations, counter insurgency operations, etc. The representatives of the Army and Air Force also admitted during evidence that the helipcopter as presently developed would meet their requirements. "With certain compromises". The Committee wonder whether such compromises are proper in designing advanced equipments for purposes of Defence. They regret to note that despite the enormous amount of money and time spent on ALH, the helicopter now being sought to be developed will not meet the projected requirements of the services and will only be a diluted version of the one which was originally envisaged. The Committee strongly deprecate the manner in which the project was allowed to under go general deviations from its original perception at various stages. The Committee expect the authorities concerned responsible for the planning process in such projects which are strategically vital from the point of view of defence preparedness of the country, to be more careful while conceiving projects of such magnitude and importance.

[Sl. No. 5 (Para 69) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

Design of any multi-purpose multi-use aircraft inevitably entails trade-offs. It has to be ensured that the basic configuration is capable of achieving performance parameters laid down for the common platform. Ministry of Defence would ensure that consultations are held with the concerned user Services, in case of all projects having inter-service utility.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48(42)/8/92 dated 27.1.95]

**Recommendation**

One of the sorry fall outs of the failure of ALH to perform its intended multi-role purpose is that the AOP roles would now continue to be performed by Cheetah/Chetak helicopters. The attack requirement of the services in the form of the armed helicopters is being met by MI-35 helicopters and by re-equipping the existing units of Chetak helicopters.

Significantly, IAF incurred an additional expenditure of 88.26 million roubles in acquiring MI-35 helicopters in 1989-90. The Committee have been informed that the attack role will gradually be performed by the intergration of the weapon system to the ALH named ALH (WSI) by developing an attack variant of the ALH as a follow on programme within two years after the completion of the design of ALH. An alternate

proposal is to develop a Light Attack Helicopter (LAH). While sanction has not been accorded to weapon system integration to ALH so for the Air Headquarters have issued ASR for LAH in December, 1987 which has been concurred in by Army Headquarters. However, according to the Ministry only after the performance of ALH prototype was fully assessed and design freeze for production taken place, the proposals would be further considered. The Committee would like to be informed of the further developments in the matter.

[Sl. No. 6 (Para 70) of Appendix II to Fifty-eigth Report of PAC (10th Lok Sabha)]

**Action Taken**

Separate proposals for Weapon Systems Integration (WSI) have been forwarded to the three services during September 1993. Navy have sanctioned funds for progressing initial design work on WSI (Navy) in December, 1993. Similarly, Army and Air Force are also actively considering release of funds for progressing initial design work pertaining to WSI.

As regards Light Attack Helicopter (LAH), Air Hqrs. have issued ASR 2/87 for LAH in December 1987 which has been concurred in by Army Hqrs. HAL has since submitted a project report to Ministry of Defence which is under consideration.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48 (42)/8/92 dated 27.1.95]

**Recommendation**

The Committee find that the cost of design and development of ALH which was envisaged as Rs. 27.36 crores in 1976 and revised to Rs. 67.87 crores in 1984 went up to Rs. 251.90 crores in 1990. The Committee have been informed that the present estimate of design and development cost of ALH based on April, 1992 level is Rs. 390. 68 crores. Similarly, the cost of ALH which was originally estimated at Rs. 35 lakhs in 1971 and revised to Rs. 70 lakhs in 1979 would now cost Rs. 9 crores. In other words the design and development cost had gone up to about 13 times of the original estimates and the cost of the helicopter to about 30 times of the original estimates. The Committee are deeply distressed to note that the inordinate delay in the development and production of ALH has resulted in huge cost overruns. The overall delay in the availability of ALH particularly with attack role capability, apart from denying a vital weapon system to IAF, led to the continued deployment of available helicopters for roles for which they were not fully equipped. They are of the considered view that the lack of adequate planning at different levels has resulted in this cost and time overruns of immense magnitude which is deplorable. The Committee suspect that there is a tendency to under estimate the cost to enable the organisation to get

sanctions from the Ministry. This should be looked into in all future estimates.

[Sl. No 7 (Para 71) of Appendix II to Fifty-eigth Report of PAC (10th Lok Sabha)]

**Action Taken**

The estimates submitted by Defence public sector undertakings for new projects are scrutinised thoroughly with a view to ensuring that they are as close to reality as possible. As per the laid down procedure, it is obligatory, at the time of seeking approval for revised cost ceilings, to satisfactorily explain increases in cost. However, the point is once again noted for compliance.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48 (42)/8/92 dated 27.1.95]

**Recommendation**

The Committee note that as per the schedule prescribed in collaboration agreement executed with firm "B" all the 13 milestones including prototype delivery to IAF should have been completed by 1991. However, only 7 out of the 13 milestones were achieved till November, 1991 when the original agreement with the firm "B" had expired. Explaining the reasons for delay in achieving the milestones, the Secretary (DP&S) during evidence *inter alia* stated that there was a certain amount of over ambitiousness in setting the milestones at the initial stage. In the opinion of the Committee it is good to be ambitious but it should not be to such an extent as to mislead the authorities. The Committee have been informed that a further collaboration with firm "B" has now been concluded and the extended contract will expire in December, 1994 with a provision for extension of the same for a further period of one year if the need arises involving an additional amount of Rs. 42.95 crores (at the 1992 exchange rate) payable to the firm. While apprising the Committee of the present status of the project the Ministry have stated that HAL has completed 8 milestones out of a total number of 13. The Committee were informed during evidence that on present reckoning the development activities are expected to be completed by December, 1994 and the exercise of commencing series production of the ALH is likely to take place from 1996-97. The Committee, however, found to their dismay, that even in terms of the revised schedule of achievement of milestones as per the extended collaboration contract, the project is still lagging behind. The Committee, therefore, recommend that with a view to obviating chances of any further cost and time overruns, concerted efforts should be made by all concerned to ensure that the remaining part of the developmental activities on this project is completed expeditiously and that the production of the helicopters commences as per the time schedule now worked out. The Committee would like to be informed of the latest position of the project.

[Sl. No. 8 (Para 72) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

With the first flight of third prototype (PT-3) having taken place in May 1994, 10 out of 13 milestones have been accomplished as on date. The remaining three milestones are expected to be achieved in the course of this year. As was submitted to the PAC in the oral examination on 16 February 1993, production is scheduled for 1996-97 subject to availability of funds.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48 (42)/8/92 dated 27.1.95]

**Recommendation**

The Committee note that a Steering Committee was constituted by Government on 28 June 1976 to review the quarterly progress of the project development and manufacture of ALH. This was later amended *vide* Government order of 4 December, 1984 to the effect that the Steering Committee will review the progress at least once in six months. The said Committee was *inte alia* required to review the fulfilment of the contractual obligations, assess progress towards successful and timely completion of the project *vis-a-vis* the expenditure and time frame and recommend further course of action. From the information made available to the Committee it was seen that the Steering Committee had met only 11 times between its reconstitution in 1984 and June, 1992. Astonishingly, before its reconstitution, the Steering Committee had met only once during the period October, 1980 to June, 1984. While explaining the reasons for the deviations in the periodicity of the meetings held by the Steering Committee with reference to the prescribed norms, the Ministry of Defence maintained that even though the meetings were not formally convened, the ALH project was kept under constant review through close interaction between the Ministry and HAL. The Committee are not satisfied with this and are of the view that the quality of monitoring effected by the Steering Committee leaves a lot to be desired. They recommend that the Ministry of Defence should look into the matter and take necessary steps so as to ensure that the progress of ALH is effectively monitored.

[Sl. No. 10 (Para 74) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

The Steering Committee on ALH is meeting regularly once every six months to take stock of the progress and impart necessary direction to the project. In between the Steering Committee meetings, the ALH project is being reviewed personally by Secy. (DP&S). In addition, Chairman, HAL reports on the progress of the projects, and specific problems, if any, in his

monthly demi official letter to Secy (DP&S). There is also the Joint Management Committee of all agencies involved in the project which meets regularly to resolve all technical problems.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48(42)/8/92 dated 27.1.95.]

**Recommendation**

The facts stated in the foregoing paragraphs clearly bring out that the development and manufacture of an advanced technology multi-role light helicopter which was mooted as early as in 1970 to succeed Cheetah and Chetak helicoptes and whose induction was to commence from 1981-82 is still to take off even after a lapse of over 23 years. The ALH developed by HAL was found unsuitable by the users for the intended multi-role requirements and had led to the decision to develop only a general purpose version of the ALH. This change in project perception clearly defeated the original purpose of developing a multi-role ALH. It also necessitated formulation of a fresh ASR to develop an attack version of ALH, work for which is yet to commence. The overall delay in the availability of ALH particularly with attack role capability, apart from denying a vital weapon system to IAF, led to the continued deployment of available helicopters for roles for which they were not fully equipped. There had also been inordinate delay in concluding the second collaboration agreement for development of ALH and the expenditure of sizeable magnitude incurred under the first agreement being rendered largely infructuous. The Committee take a serious view of the manner in which the project has been developed so far and recommend that the reasons for the inordinate delay in the execution of this project should be thoroughly analysed at the highest level and remedial steps should be taken to ensure that the deficiencies experienced in the execution of this project are obviated in the future defence projects.

[Sl. No. 12 (Para 76) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

The delays in execution of the project were caused initially by lack of resources, and subsequently, due to changes in the requirements of the services. It is felt that a project of this nature has to be sensitive to the requirements of the customers and, therefore, certain flexibility in time frame becomes necessary. Similarly, certain amount of delay is inherent in designing and developing a helicopter of such advanced features with help from outside agencies. Adequate time and attention need to be devoted to analysing the flight test data and investigating and solving development problems which are inherent in any design/development programme. The time-frame of development of ALH, which is the first such project taken up by HAL, compares favourbly with the time-frame for similar development programmes undertaken by established helicopter

manufacturers abroad (project schedule for different helicopters under current development is placed at Appendix II). The flight test achievements of ALH also indicate the ALH has, within a short span of time, demonstrated compliance with major performance parameters stiupulated in the Air Staff Requirement (ASR) (Flight Test Achievements of ALH are placed at Appendix III (not enclosed).

Although the attack and AOP roles had to be dispensed with to accommodate the specific requirements of the Army, the ALH continues to be a multi-role helicopter capable of performing the roles of armed reconnaissance and surveillance, close air support, antisubmarine warfare, casualty evacuation, aerial mine laying, aerial electronic warfare platform, logistic support, search & rescue, carrying underslung load, etc. Thus the ALH will be useful for the three services.

Further specialised variants can be derived from the basic version relatively easily. HAL has already submitted a proposal from a Light Attack Helicopter (LAH) to the Ministry of Defence. Considering the above facts, it is submitted that the ALH programme has been a major step forward in the direction of self-reliance in designing and devleoping a helicopter of such sophistication.

Notwithstanding the above, every attempt would by made by the Ministry of Defence to ensure that such delays are minimised in future. Necessary instructions issued in this regard are enclsoed (Appendix IV).

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence, O.M. No. 48(42)/8/92 dated 27.1.95]

APP I

MINISTRY OF DEFENCE

(DEPARTMENT OF DEFENCE PRODUCTION & SUPPLIES)

The Public Accounts Committee (PAC) of the Tenth Lok Sabha in its 58the Report pertaining to design and development of the Advanced Light Helicopter (ALH) recommended that where an option for foreclosure exists in a contract, such an option must invariably be exercised if it is found that operating the contract is infructuous. In view of the PAC recommendation, it may be ensured, while implementing any contract/ agreement, that option for prematurely winding up of the project/contract is invariably excercised when the balance of advantage is clearly in favour of foreclosure.

2. With a view to ensure that no omissions take place on this account in future, the above recommendation is brought to the notice of all concerned for information, and guidance.

-Sd-
(V.K. Pandit)
Additional Secretary (DP&S)

All Joint Secretaries/Additional Financial Advisors in the Ministry of Defence.

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MOD ID No. 48(42)/8/92/D(HAL), dated 9th December, 1994.

**Copy to:**

Defence Secretary
Secretary (DP&S)
SA to RM
FA(DS)
Addl. Secy.(B)
Addl. Secy.(R)
All CEOs of Defence PSUs and DG OFB.

APP IV

MINISTRY OF DEFENCE
(DEPARTMENT OF DEFENCE PRODUCTION & SUPPLIES)

The Public Accounts Committee (PAC) of the Tenth Lok Sabha in its 58the Report pertaining to design and development of the Advanced Light Helicopter (ALH) recommended that remedial steps be taken to ensure that delays in execution of defence projects do not take place. In view of the PAC recommendation, it is requested that immediate steps may be taken to review the existing mechanism for monitoring and prioritisation of programmes under implementation, and ensure that delays do not take place on account of factors which are within the control of the Ministry.

2. With a view to ensure that no omissions take place on this account in future, the above PAC recommendation is brought to the notice of all concerned for information, and guidance.

-Sd-
(V.K. Pandit)
Additional Secretary (DP&S)

All Joint Secretaries/Additional Financial Advisors in the Ministry of Defence.

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MOD ID No. 48(42)/8/92/D(HAL), dated 9th December, 1994.

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All CEOs of Defence PSUs and DG OFB.

## CHAPTER III

## RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN THE LIGHT OF THE REPLIES RECEIVED FROM GOVERNMENT

### Recommendation

The Committee note that the change in the concept from single to twin engine helicopter necessitated the formulation of a revised Air Staff Requirement (ASR) which was issued in May, 1979, the helicopter was re-named as Advanced Light Helicopter (ALH) and was planned to be inducted into service by 1986-87. The Government also decided to enter into a fresh collaboration agreement to cater to the needs of the twin engine configuration. The 10 year collaboration agreement with firm "A" expired in September, 1980. Unfortunately, by that time even the design parameters of the twin engine helicopters had not been decided. Eventually the second collaboration agreement was concluded with another firm M/s. MBB of West Germany (firm "B") on 21 July, 1984 after a lapse of four years. Thus, the Committee find to their dismay that the revenue expenditure of Rs. 7.56 crores incurred on pay and allowances of technicians, collaboration fee and acquiring of tools valuing more than Rs. 20 lakhs under the 10 years agreement with firm "A" was rendered largely infructuous.

[Sl. No. 4 (Para 68) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

### Action Taken

The design and development of a helicopter was attempted for the first time in the country. The collaboration with firm "A" resulted in acquiring valuable experience in the basic design concepts in areas like transmission, rotor blades, rotor head, etc. Thus, the expenditure of Rs. 7.56 crores incurred on pay and allowances of technicians, collaboration fee, etc. was not entirely infructuous.

It is, however, accepted that expenditure of about Rs. 20.74 lakhs on tools specific to single engine configuration, test specimen components and mock-up details could not be used for the twin engine helicopter.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence, O.M. No. 48(42)/8/92 dated 27.1.95]

**Recommendation**

In this context, the Committee recall their recommendation made in Para 1.105 of their 87th Report (Seventh Lok Sabha) presented in the Lok Sabha on 16 April, 1982 wherein they had recommended a review of important defence development projects sanctioned during the last 15 years. In pursuance of the recommendation Government constituted a study team. Amongst other recommendations, the study team had suggested that a Steering Committee with specific powers should be constituted for each major project. According to the Ministry of Defence, Steering Committees have since been constituted by the Department of Defence Production & Supplies for all major projects under execution. In the light of the dismal progress in the development of the Advanced Light Helicopter as discussed in this Report, the Committee desire that the Ministry of Defence should have a fresh look at the functioning of the mechanism for monitoring the progress in the execution of important development projects to make it more effective. The Committee would like to be informed of the precise action taken in the matter.

[Sl. No. 11 (Para 75) of Appendix II to Fifty-eight Report of PAC (10th Lok Sabha)]

**Action Taken**

The Ministry of Defence have constituted Steering Committee under the chairmanship of Secretary/Addl. Secy. for periodically monitoring the progress of all important projects.

The DRDO, which has many important R&D projects in hand, has instituted a comprehensive mechanism for monitoring and programme prioritisation, seeking and updating user perception in the ever changing strategic and tactical environment, resolving inter-project/programme conflicts, and solving technology transfer issues. This mechanism includes periodic monitoring of projects by R&D panels in respect of various disciplines, apex boards in respect of key programmes, special reviews by Scientific Advisor to RM and Chiefs of the three Services for increasing user orientation of DRDO activities. The monitoring mechanism uses tools such as computer-aided schedule monitoring (CASM) and PERT for rapid assessment of programme status and provisioin of on-line decisions. Consolidated inputs from various elements are integrated and reviewed by the DRDO Council chaired by SA to RM. This has enhanced the participative decision making process.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence, O.M. No. 48(42)/8/92 dated 27.1.95]

## CHAPTER IV

## RECOMMENDATIONS/OBSERVATIONS REPLIES TO WHICH HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

—NIL—

## CHAPTER V

## RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH GOVERNMENT HAVE FURNISHED INTERIM REPLIES

### Recommendation

The Committee find that as per the original agreement with the firm "B" payments were required to be made to them on achievement of each of the 13 milestones prescribed in the agreement. It was also stipulated from time to time that release of payment against each milestone would be made only after documents certifying the achievement of the respective milestone were executed jointly by the firm and HAL. The Committee are concerned to find that in spite of these provisions, payments up to the 10th milestone were made to the firm even though works up to the 7th milestone only were completed which resulted in over payment on this account to firm A to the tune of Rs. 29.18 crores. While admitting this lapse during evidence the Secretary, Defence Production & Supplies explained that a clause in the agreement was revised in December, 1985 with a limited objective of converting certain payments in kind into cash and inadvertently at that stage this provision relating to payment being connected with the achievement of milestone was overlooked. The Committee are not satisfied with this explanation. The Committee desire that the matter should be thoroughly inquired into with a view to fixing responsibility.

[Sl. No. 9 (Para 73) of Appendix II to Fifty-eigth Report of PAC (10th Lok Sabha)]

### Action Taken

As per the original agreement, the milestone payments were due on achieving the stipulated milestone or within 120 days of the target date for achievement of the milestone. Amendment No. 1 to ALH agreement dated 31 July 1984 was signed between M/s MBB and the Govt. of India on 30 December 1985. Prior to this amendment the issue was discussed between the Government of India and M/s MBB. The amendment was necessitated and carried out for the limited purpose of substituting the conditions of the original agreement which stipulated provision of certain services in kind to the German specialists stationed in Banglaore with a new condition of availing the services on payment resulting in increased cash payments to M/s MBB. In order to reflect these changes, the relevant Articles of Agreement *viz.* Art. 4.1, 5.1 and para 2 (d) of Annexure III were to be amended. The change required in Art. 5.1 was only in the break-up of amount pertaining to different milestone payments to MBB, so that the total worked out to DM 99.736 million

instead of DM 91 million. However, while carrying out these changes the following clause was inadvertently omitted by MBB:

> "The achievement of milestones will be stated in documents to be executed by representatives of HAL and MBB; such documents will be drawn up during the design reviews. If the design review results in extending the time schedule for completion of any milestone, the payment for the relevant milestone shall become due at the end of the extended time schedule but not exceeding in any case 120 days of the originally stipulated date for the respective milestone. Force-majeure shall, however, always be additional."

The omission of this Clause resulted in the unintended consequence of changing the payment terms of MBB. However, since the amendment was sought and obtained exclusively for providing cash payment in lieu of the facilities in kind to the MBB personnel at Bangalore and the issue of altering the payment terms was never broached as an item during the discussions on the question of carrying out this amendment, MBB continued to raise bills and HAL continued to make payments to them as per the original clause within the 120 days grace period, unrelated to the actual achievement of the milestones. Consequently, ten milestones payments had been paid to M/s MBB till May 1990, even though until then only six milestones had been achieved in physical terms.

The said omission seems to have led to the observation of Audit that payment terms have been amended to stipulate that milestone payments were to be made only after achievement of each milestone. The fact, however, is that while the amendment contemplated altering the cost of the agreement in cash terms, the alteration of terms of payment had neither been sought by the Government, nor agreed to between the two sides at any time.

After omission of the above mentioned clause from Art. 5.1, the amended Article has the impact of changing the terms of payment. The unintended change has serious implications in that it essentially alters MBB's role in the project from that of being service/support consultant to a risk-sharing partner. However, consequent upon the lapse being pointed out by the Audit, payment to M/s. MBB beyond 10th milestone was suspended and the omission of provision was brought to the notice of the MBB. Simultaneously, legal advice was sought from the Ministry of Law/ Solicitor General (S.G.) regarding the validity of the revised payment terms arising out of the mistaken omission of the aforementioned sub-clause. After considering the facts and circumstances of the case, the S.G. opined that it would be in order and in national interest to rectify the amended agreement to restore the clause regarding the payment on the expiry of 120 days, as originally provided. However, notwithstanding the

legal opinion, the Ministry took a decision to continue to withhold further payments to M/s. MBB as a leverage till the issue relating to the extension of the agreement beyond 17.11.91 was satisfactorily resolved with M/s. MBB. Accordingly, discussions with MBB on the question of milestone payments as well as the extension of the agreement beyond the period of seven years were initiated in November, 1990. In October, 1991 further negotiations with MBB were also held.

During the discussions, MBB reiterated arguments in support of their claim that the omission of the concerned clause in Art 5.1 was totally inadvertent. They refused to accept any alteration of the terms of payment originally agreed upon as part and parcel of the ALH Consultancy Agreement. They also expressed their deep dissatisfaction at the withholding of their scheduled payments.

After protracted negotiations, and on the specific condition that payments already made to them so far would not be disturbed in any way, MBB agreed to the extension of the present agreement for a period of three years (with an option of further extension of one year) beyond 17 November 1991. The opportunity afforded by the unintended omission of the sub-clause in question was also utilised by the Indian side as a negotiating lever in bargaining better terms for the extended period of the agreement. Some of the significant concession obtained from MBB are as under:

(a) MBB agreed to give credit in money value equivalent to 200 man months after taking into account the man-months which were likely to be physically expended up to the expirty of the original period of the agreement on 17.11.91 and after giving concessions in respect of the overtime already charged by MBB to HAL. This agreement on the part of the MBB has resulted in a saving of DM 9.32 million equivalent to Rs. 14.28 crores at December 1991 rate of exchange, to US. It would be relevant to mention here that as the original agreement did not provide for any carry forward of the unexpired man-months to a future period, the GOI would have had still to pay all the sums due to M/s. MBB, even if the agreement was not extended, notwithstanding the fact that the project was incomplete and lesser number of milestones had been achieved in physical terms. The S.G., to whom a specific question in this regard was posed, also opined that all amounts due to MBB become payable on the expiry of the original agreement, on 17 November 1991.

(b) MBB agreed to regulate the future overtime charges to their specialists at Bangalore at 50% of the rate prescribed for normal working hours.

(c) MBB agreed to a change in the modality of payment to the extent that in the even of delay in the achievement of a milestone, while 80% amount would be payable on the date prescribed, the balance 20% would become payable only on the actual achievement of the relevant milestone.

As a result of this clause, a greater degree of commitment and involvement of MBB in the achievement of the laid down milestones has been obtained as compared to the provisions of the original agreement.

Nevertheless, for the period the agreement remained without the provision of payment regardless of achievement of milestones, payment made was beyond the scope of the written word of the contract. Managing Director of HAL has been asked to enquire into this and further action will be taken on receipt of the report.

This has been vetted by the Integrated Finance and by the Audit.

[Ministry of Defence O.M. No. 48 (42)/8/92 dated 27.1.95]

NEW DELHI;
*24 February, 1995*

5 Phalguna, 1916 (Saka)

BHAGWAN SHANKAR RAWAT
*Chairman,*
*Public Accounts Committee.*

## APPENDIX

*Conclusions and Recommendations*

| Sl. No. | Para | Ministry/ Deptt. concerned | Recommendations/Conclusions |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 1 | 3 | Ministry of Defence (Deptt. of DP&S) | The Committee hope that the final reply in respect of the recommendation for which only interim reply has been furnished will be submitted by the Ministry expeditiously after getting it duly vetted by Audit. |
| 2 | 10 | -do- | In their earlier Report the Committee had found that the development and manufacture of an advanced technology multi-role light helicopter (subsequently named as Advanced Light Helicopter—ALH) which was mooted as early as in 1970 to succeed Cheetah and Chetak helicopters and whose induction was to commence from 1981-82 was still to take off even after the lapse of over 23 years. The cost of design and development of ALH which was envisaged as Rs. 27.36 crores in 1976 was as per the latest estimates intimated to the Committee expected to cost about Rs. 390 crores. Similarly, the cost of the helicopter (ALH) which was originally estimated at Rs. 35 lakhs in 1971 would now cost Rs. 9 crores. As per the revised schedule intimated to the Committee during evidence, all the 13 milestones were expected to be completed by December 1994 and the exercise of commencing series production of ALH was likely to take place from 1996-97. However, the Committee find from the action taken note that only 10 out of the 13 milestones have been accomplished as on date. Evidently, the development project has further lagged behind the schedule which is a matter of concern to the Committee. The Ministry of |

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| | | | Defence have now assured the Committee that the remaining three milestones are expected to be achieved in the course of this year and that the production is scheduled to commence from 1996-97 itself subject to availability of funds. The Committee would once again emphasise that all concerted efforts should be made to ensure that the remaining parts of the developmental activities on this project are completed expeditiously and that the production of the helicopter commences without any further modification in the schedule. The Committee would like to be informed of the latest position of the project and the project cost now estimated for completion of the project and also the helicopter. |
| 3 | 11 | Ministry of Defence | The Committee further note that in the light of the deficiencies experienced in the exectuion of ALH project, the Ministry of Defence have in pursuance of the recommendations of the Committee, issued instructions to all concerned to take immediate steps for reviewing the existing mechanism for monitoring and proiritisation of programmes under implementation and ensure that delays do not take place on account of factors which are within the control of the Ministry. The Committee trust that the Ministry of Defence will faithfully implement these instructions with a view to minimising delays in the execution of similar defence projects. |

## PART-II

## MINUTES OF THE TWENTY-FIRST SITTING OF THE PUBLIC ACCOUNTS COMMITTEE (1994-95) HELD ON 20 FEBRUARY, 1995

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The Committee met from 1100 to 1130 hrs. on 20 February, 1995 in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Bhagwan Shankar Rawat—*Chairman*

MEMBERS

*Lok Sabha*

2. Shri Bandaru Dattatraya
3. Shri Dileep Singh Bhuria
4. Sqn. Ldr. Kamal Chaudhry
5. Dr. K.V.R. Chowdary
6. Shri Jagat Veer Singh Drona
7. Shrimati Krishnendra Kaur (Deepa)
8. Shri V. Krishna Rao
9. Shri Mohan Singh
10. Shri Somappa R. Bommai
11. Shri Triloki Nath Chaturvedi
12. Miss Saroj Khaparde
13. Shri G.G. Swell

SECRETARIAT

1. Shri Murari Lal—*Joint Secretary*
2. Smt. P.K. Sandhu—*Director*
3. Shri P. Sreedharan—*Under Secretary*

REPRESENTATIVES OF AUDIT

1. Shri Samir Gupta—*Addl. Dy. C&AG*
2. Shri S.H. Manghani—*Addl. Dy. C&AG*
3. Shri K. S. Menon—*Pr. Director of Audit. (Air Force and Navy)*
4. Shri A. Sathyavardhana—*Pr. Director of Audit, (Indirect Taxes)*
5. Smt. Ruchira Pant—*Director of Audit (Customs)*
6. Shri Asim Sharma—*Dy. Director (DT)*

2. The Committee considered the following draft Reports:

(i) ** **** **** ****

(ii) *** **** **** ***

(iii) *** **** **** ***

(iv) Design and development of Advanced light helicopter. [Action taken on 58th Report of PAC (10th Lok Sabha)]

(v) *** ***** *** *****

The Committee adopted the above mentioned draft Reports without any amendment/modification.

3. The Committee authorised the Chairman to finalise the draft report on "Induction of an aircraft" after considering the comments of the Ministry of Defence from the security angle. They also authorised the Chairman to finalise the draft Reports in the light of the comments of Audit arising out of factual verification, and also to present the Reports to the Hosue.

4. ** ***** **** ****

*The Committee then adjourned.*